

Uncertainty Matrix

Type	Goal & Scope	Inventory Analysis	Impact Assessment
Data Uncertainty		1. Collection/ 2. Allocation methods used to create data 3. Inaccurate or 4. No data	1. Uncertainty in Lifetimes of substances 2. Travel potential
Model Uncertainty		5. Linear vs. non-linear modeling	3. Characterization factors not known or uncertain
Uncertainty due to choices	1. Functional unit, 2. System boundary 3. Service life 4. Maintenance cycles, 5. Methods and 6. Tools used in modeling, 7. Choice of allocation methods, 8. IA Method and 9. IA Categories		
Temporal Variability		6. Difference in yearly factory emissions 7. Data vintage	4. Interpretation of impacts Over time, 5. effect of Climate (ex. temp.)
Spatial Variability		8. Regional differences between factories	6. Regional differences in environmental sensitivity (don't effect all areas the same) 7. Distribution of emissions
Variability between objects/sources		9. Difference b/n Factories/ 10. Technologies which produce same product	8. Differences in human exposure patterns
Mistakes	10. Any	11. Any	9. Any

What kinds of Uncertainty are in your final projects?

- **Goal & Scope**

- Think of how uncertainty is caused by the need to restrict a real world scenario into a defined LCA model by making choices on parameters, modelling methods (ex. take offs), service life, etc.. How can these choices introduce uncertainties into your LCA model that deviate from the real world outcomes?

- **Inventory Analysis**

- In your projects, you are using construction product information from the Athena LCI Database, which is built into the Impact Estimator. The LCI data in this database represents North American industry averages for construction product life cycles. What are some ways that this LCI data may differ from the actual process LCI data in the product system that supports the life cycle of your building?
- See this link for information on the Athena LCI Database data in the Impact Estimator (http://www.calculatelca.com/wp-content/uploads/2012/10/LCI_Databases_Products.pdf)

- **Impact Assessment**

- In your projects, you are using the TRACI impact assessment method, and within TRACI there are impact categories (ie. Global Warming, Acidification, etc.). The characterization factors contained in these impact categories describe the potential of emitted substances to react and contribute to impacts in the average North American context. How can the calculation of these characterization factors result in a deviation from their real world impact outcomes?
- See this link for information on TRACI (<http://www.epa.gov/nrmrl/std/traci/traci.html>)

Uncertainty Assignment Instructions

1. Choose 3 sources of uncertainty from the Uncertainty Matrix for each LCA stage.
2. Describe how each source creates uncertainty and provide an example to illustrate this uncertainty in your final project.
3. Submit.

Assignment #2 – Grading Rubric

Evaluation Area for each Type of Uncertainty chosen	Evaluation Criteria				
	4	3	2	1	0
Description of cause of uncertainty and example that illustrates how it exists in final projects.	Very clear description and illustration of uncertainty.	Well described and illustrated.	Adequately described and illustrated.	Loosely described and illustrated.	Does not describe or illustrate uncertainty.
Use of LCA Terminology and Final Project References.	Uses appropriate LCA terminology and references to final project situation.	Terminology and references to final project are not accurate or are missing.	Terminology and references to final project are not accurate or are missing.	No terminology used or references to final project made.	No terminology used or references to final project made.

Make sure your responses for each Type of Uncertainty:

1. Have a clear description and example to illustrate it in your final project, and
2. Use the proper LCA terms and final project references.

Each response is out of 8, and the assignment is out of 72.